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15774
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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/535,387 | 05/17/2005 | Yoshio Yoshida | TIP 034 | 5809 |

7590 04/05/2006
Gary C Cohn
Suite 105
4010 Lake Washington Boulevard NE
Kirkland, WA 98033

EXAMINER

SHEWAREGED, BETELHEM

ART UNIT PAPER NUMBER

1774

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--|---------------------------------------|--|
| Office Action Summary | Application No. 10/535,387 | Applicant(s) YOSHIDA ET AL. | |
| | Examiner Betelhem Shewareged | Art Unit 1774 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/13/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5, 7-12, 14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 2002/0176970 A1), as evidenced by AEROSIL Datasheet (Internet Print out), in view Otani et al. (US 2001/0036552 A1).

Kobayashi discloses an ink jet recording sheet comprising a support, a colorant receiving layer applied on the support, and a boron compound applied onto the colorant receiving layer (abstract and [0090]). The boron compound is equivalent to the claimed treatment solution. The colorant receiving layer comprises a polyvinyl alcohol resin and a pigment containing a vapor phase process silica and a colloidal silica ([0068] and [0074]). The support is a paper coated a resin [0174], wherein the coated resin is equivalent to the claimed undercoating layer. AEROSIL 300 is an example of the vapor phase process silica, and has a specific surface area of 300 m²/g, which is evidence by AEROSIL Datasheet. The amount of the vapor phase process silica is at least 50% by weight based on total pigment [0074]. The ratio of particles to pigment is 1.5/1 to 10/1 [0085]. Kobayashi does not disclose that the colloidal silica has the claimed particle size.

Otani teaches an ink jet recording material comprising a support and at least an outermost ink receiving layer having a binder and a pigment (abstract). The pigment can be colloidal silica having an average particle size of 30-500nm and a primary particle size of 5-60nm ([0018] and [0020]).

Kobayashi and Otani are analogous art because they are from the same field of endeavor that is the ink jet recording sheet art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the colloidal silica of Otani with the invention of Kobayashi in order to enhance ink absorbency and provide excellent color reproduction (see [0020] of Otani).

With respect to the value of specular gloss, it is elementary that the mere recitation of newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art.” *In re swinehart et al.*, 169 USPQ 226 at 229. Since the combination of the Kobayashi reference and the Otani reference teaches all of Applicant’s claimed compositional and positional limitations, it is inherent that the reference article function in the same manner claimed by Applicant. The burden is upon Applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

3. Claims 1, 3, 4, 6-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima (US 6,183, 851 B1) in view of Otani et al. (US 2001/0036552 A1).

Mishima discloses an ink jet image recording medium comprising a support and a coating layer on the support (abstract). The coating layer comprises inorganic particles such as amorphous silica, gamma alumina and colloidal silica, and the particles may be used in combination (col. 8, lines 24-55). The support is a paper laminated with a polyolefin (col. 17, line 20), wherein the polyolefin is equivalent to the claimed undercoating layer. The coating layer further comprises a binder such as polyvinyl alcohol (col. 9, line 66). The ratio of particles to binder is disclosed in col. 11, line 48-62. Mishima does not disclose that the colloidal silica has the claimed particle size.

Otani teaches an ink jet recording material comprising a support and at least an outermost ink receiving layer having a binder and a pigment (abstract). The pigment can be colloidal silica having an average particle size of 30-500nm and a primary particle size of 5-60nm ([0018] and [0020]).

Mishima and Otani are analogous art because they are from the same field of endeavor that is the ink jet recording sheet art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the colloidal silica of Otani with the invention of Mishima in order to enhance ink absorbency and provide excellent color reproduction (see [0020] of Otani).

With respect to the value of specular gloss, it is elementary that the mere recitation of newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art." *In re swinehart et al.*, 169 USPQ 226 at 229. Since the combination of the Mishima reference and the Otani reference teaches all of Applicant's claimed compositional and

positional limitations, it is inherent that the reference article function in the same manner claimed by Applicant. The burden is upon Applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

With respect to the amount of colloidal silica based on the total particles, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the amount of colloidal silica in order to optimize ink receiving and printing properties of the layer. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is 571-272-1529. The examiner can normally be reached on Mon.-Fri. 8:00AM-4:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1774

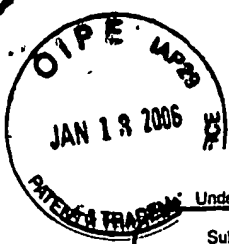
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B.S.

March 31, 2006.



BETELHEM SHEWAREGED
PRIMARY EXAMINER



PTO/SB/08A (08-03)

Approved for use through 07/31/2008. OMB 0651-0031
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| | | | |
|---|------|--------------------------|---------------|
| Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i> | | Complete if Known | |
| | | Application Number | 10/535,387 |
| | | Filing Date | 17 May 2005 |
| | | First Named Inventor | Yoshida |
| | | Art Unit | 2853-1774 |
| | | Examiner Name | B. Shewareged |
| Sheet 1 | of 3 | Attorney Docket Number | TIP 034 |

| U. S. PATENT DOCUMENTS | | | | | |
|------------------------|-----------------------|--|--------------------------------|---|---|
| Examiner Initials* | Cite No. ¹ | Document Number | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
| | | Number-Kind Code ² (if known) | | | |
| BS | | US- 5281467 | 01-25-1994 | Shimada et al. | |
| " | | US- 6238784 | 05-29-2001 | Mochizuki et al. | |
| " | | US- 6410123 | 06-25-2002 | Otani et al. | |
| " | | US- 6773770 | 08-10-2004 | Sugiyama et al. | |
| " | | US- 6846524 | 01-25-2005 | Ozawa et al. | |
| " | | US- 10/541,300 | | | |
| " | | US- 10/532,531 | | | |
| " | | US- 10/524,480 | | | |
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| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|-----------------------|---|--------------------------------|---|---|-------------------------------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear | T ⁶ |
| | | Country Code ³ Number ⁴ Kind Code ⁵ (if known) | | | | |
| BS | | JP 2002-248851A | 09-03-2002 | Hokuetsu | | <input checked="" type="checkbox"/> |
| " | | JP 2002-166645 | 06-11-2002 | Hokuetsu | | <input checked="" type="checkbox"/> |
| " | | JP 2002-248850A | 9-3-2002 | Hokuetsu | | <input checked="" type="checkbox"/> |
| " | | JP 11-020306A (Abst) | 01-26-1999 | Konica | | <input type="checkbox"/> |
| " | | JP 2002-362010 | 12-18-2002 | PT Public | | <input checked="" type="checkbox"/> |
| " | | JP 2003-145916 | 5-21-2003 | Oji Paper | | <input checked="" type="checkbox"/> |

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| Examiner Signature | | Date Considered | 03 / 2006 |
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2

of 3

Attorney Docket Number

TIP 034

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| Application Number | 10/535,387 |
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10/535,387

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| Filing Date | 17 May 2005 |
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| First Named Inventor | Yoshida |
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| Examiner Name |
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B. Shewareged
TIP 034

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| Attorney Docket Number | TIP 034 |
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U. S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

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|--------------------------|-----------------------|---|------------------|---|---|----------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | Publication Date | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear | T ^o |
| | | Country Code ² -Number ⁴ -Kind Code ³ (if known) | MM-DD-YYYY | | | |
| BS | | JP 2001-270238 | 10-21-2001 | Oji Paper | | ✓ |
| " | | JP 62-095285 (Abst) | 05-01-1987 | Sanyo | | |
| " | | JP 06-305237 (Abst) | 11-1-1994 | New Oji | | |
| " | | JP 05-338348 | 12-21-1993 | Nisshinbo | | ✓ |
| " | | JP 2000-85242 | 3-28-2000 | Oji Paper | | ✓ |
| " | | JP 2000-108505 | 4-18-2000 | Mitsubishi | | ✓ |

**Examiner
Signature**

Date Considered

03/2006

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 3

of 3

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10/535,387

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17 May 2005

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| First Named Inventor | Yoshida |
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| Yoshida |
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Art Unit

2853

Examiner Name

B. Shewareed

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|------------------------|---------|
| Attorney Docket Number | TIP 034 |
|------------------------|---------|

TIP 034

U. S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

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|--------------------------|-----------------------|---|------------------|---|---|----------------|
| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | Publication Date | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear | T ² |
| | | Country Code ³ Number ⁴ Kind Code ⁵ (if known) | MM-DD-YYYY | | | |
| BS | | JP 2000-108506 | 4-18-2000 | Mitsubishi | | ✓ |
| " | | JP 2000-62314 | 2-29-2000 | Nippon Kakoh | | ✓ |
| " | | JP 09-263039 | 10-07-1997 | Oji Paper | | ✓ |
| " | | JP 11-034481 | 02-09-1999 | Konica | | ✓ |
| " | | JP 59-169922 (abst) | 09-26-1984 | Tokuyama | | |
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**Examiner
Signature**

Date Considered

03/2006

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| | | | |
|-----------------------------------|---------------------------------------|--|-------------|
| Notice of References Cited | Application/Control No. 10/535,387 | Applicant(s)/Patent Under Reexamination YOSHIDA ET AL. | |
| | Examiner Betelhem Shewareged | Art Unit 1774 | Page 1 of 1 |

U.S. PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
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| * | A | US-2002/0176970 A1 | 11-2002 | Kobayashi et al. | 428/195 |
| * | B | US-6,183,851 B1 | 02-2001 | Mishima, Masayuki | 428/32.34 |
| * | C | US-2001/0036552 A1 | 11-2001 | Otani et al. | 428/411.1 |
| | D | US- | | | |
| | E | US- | | | |
| | F | US- | | | |
| | G | US- | | | |
| | H | US- | | | |
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| | J | US- | | | |
| | K | US- | | | |
| | L | US- | | | |
| | M | US- | | | |

FOREIGN PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification |
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NON-PATENT DOCUMENTS

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | AEROSIL Datasheet (Internet Print-Out) 2/12/03 |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

**AEROSIL®****degussa.**

AEROSIL® 300

Hydrophilic fumed Silica

AEROSIL® 300 is a hydrophilic fumed silica with a specific surface of 300 m²/g.

Applications and Properties

Applications

- Paints and Coatings
- HCR and LSR (LIMS)- silicone rubber
- Cable compounds and unsaturated Polyester resins
- Adhesives and Sealants
- Printing inks

Properties

- Rheology and thixotropy control of liquids, binders, polymers, etc.
- Optimal dispersion yields best results in pronounced thickening and thixotropy.
- Reinforcement of HCR and LSR (LIMS)-silicone rubber.
- Excellent transparency in unsaturated polyester resins.

| Physico- chemical Data | | |
|--|-------------------|---------------|
| Properties | Unit | Typical Value |
| Specific surface area (BET) | m ² /g | 300 ± 30 |
| Average primary particle size | nm | 7 |
| Tapped density (approximate value)* acc. to DIN ISO 787/X1, Aug. 1983 | g/l | ca. 50 |
| Bulk density (approximate value)* ACM 4 | g/l | ca. 30 |
| Moisture* 2 hours at 105°C | % | < 1.5 |
| Ignition loss 2 hours at 1000°C based on material dried for 2 hours at 105°C | % | < 2.0 |
| pH-Value in 4% dispersion | | 3.7 - 4.7 |
| SiO ₂ - content (1) (1) based on ignited material | % | > 99.8 |

* ex plant

The data represents typical values and not production parameters


Safety and Handling

With each (sample-) delivery of our products we will send a Material Safety Data Sheet. At any time you can also ask for an MSDS or any other information regarding product safety.

Packaging and Storage

AEROSIL® 300 is supplied in multiple layer 10 kg bags. We recommend to store the product in closed containers under dry conditions and to protect the material from volatile substances. AEROSIL® 300 should be used within 2 years after production.

| Registration | |
|---|---------------------------|
| CAS-No. | 112 945-52-5 7631-86-9 |
| EINECS | 231-545-4 |
| TSCA (USA), AICS (Australia), CEPA (Canada) | Registered |
| MITI (Japan) | 1-548 |
| ECL (Korea) | KE-30953 (KE-31032) |
| NEPA (China) | List 1 |

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